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THE AGRICULTURAL STUDENT

OHIO STATE UNIVERSITY, COLUMBUS, OHIO



SEPTEMBER 1917

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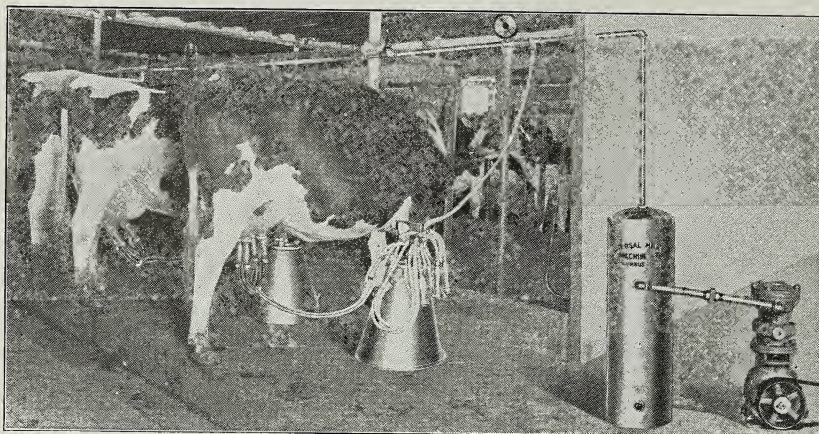
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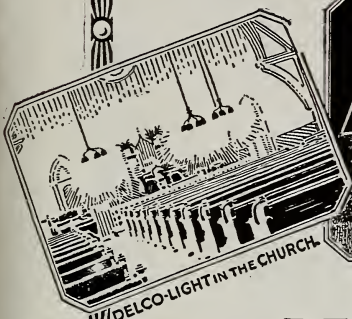
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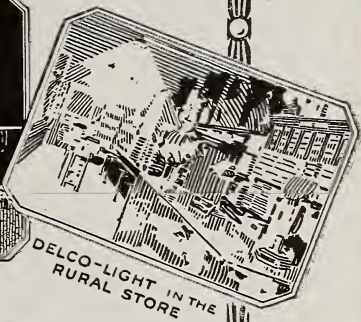
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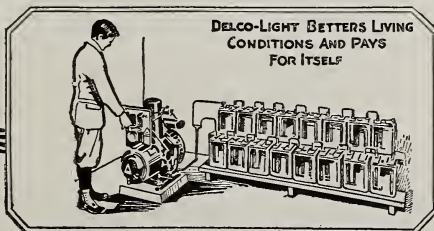
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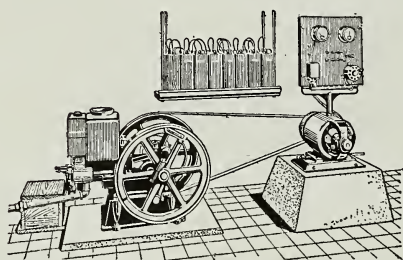
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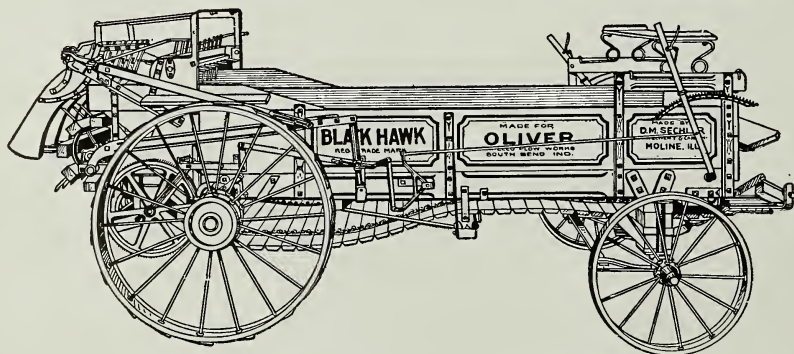
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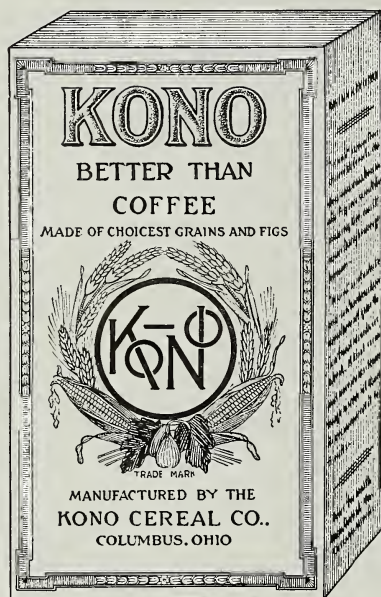
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Contents

	Page
FRONTISPIECE	10
ACTIVITIES OF COUNTY AGENTS IN INDIANA—	
G. I. Christie	11
BEEF CATTLE AND PERMANENT AGRICULTURE—	
Gilbert Gusler	14
FALL PLOWING OF ORCHARDS—	
J. H. Gourley	18
DAIRYING IN OKLAHOMA—	
C. A. Burns	20
PRODUCTION AND CARE OF FALL PIGS—	
J. S. Coffey	24
THE AUTO AS A FACTOR IN COUNTRY LIFE—	
C. R. Wagner	27
VALUE OF FARM WOODLOTS IN THE WAR—	
Edmund Secrest	29
EDITORIALS	32
CURRENT LITERATURE	36
HOME ECONOMICS	37
SOY BEANS AS HUMAN FOOD—	
J. B. Park	42
ALUMNI NOTES	45
COMPARISON OF NATIVE AND WESTERN FEEDER LAMBS—	
Clayton H. Elliott	47
NEWS NOTES	48



THE AGRICULTURAL STUDENT

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No. 1

ACTIVITIES OF COUNTY AGENTS IN INDIANA

What Is Being Done to Increase Food Production: Plans That Were Made and Put Into Effect in Our Sister State for Community Betterment.

G. I. CHRISTIE, State Superintendent of County Agents, Lafayette, Indiana

WAR, requiring increased production of food, has multiplied the duties of county agents and has brought into bold relief the work they have been doing to organize farmers for the permanent betterment of agricultural conditions. To secure immediate results they have been asked to undertake special campaigns for food supplies during the war, in addition to keeping in progress their regular programs of community construction.

The influence that county agents may wield in the country wide food-increase drive is best presented by an outline of what county agents have done and are doing to increase and conserve the food supply.

As soon as the call for more food was issued the county agents of Indiana began a campaign thru newspapers and public meetings urging greater production. It is estimated that the meetings were attended by 400,000 people. The acreage of corn in Indiana has been increased more than 15 per cent or 750,000 acres. Assuming an average corn yield this will mean, next fall, an increase of 30,000,000 bushels of corn as a result of expansion of acreage alone.

Agitation for the selection of good seed corn began last fall in campaigns for fall-selection of seed, and throughout the winter county agents urged and directed seed-corn testing in rural

schools. When the declaration of war came, a final campaign was carried directly to the farmer.

An example of what county agents did is found in the work of Russell G. East, County Agent of Shelby County. At his suggestion the bankers of Shelby County had made 1000 seed corn testers. These were distributed to farmers who would use them. At one meeting, attended by 48 farmers, 42 agreed to use seed corn testers for the first time, and took the testers provided. As a result, Mr. East reports that farmers who planted corn with the usual plates found that their corn was thicker than they wanted it and much thinning was done.

Conservation of the extensive plantings of garden crops by home canning on a scale never before attempted, has been systematically planned. In LaPorte County, the banks of LaPorte, after consultation with County Agent J. D. Harper, installed a factory size pressure canner to sterilize vegetables for the entire community. Housewives pack vegetables in the cans cold, bring them to the factory and take them away when the cooking is complete, thus avoiding the expense and heat of doing this at home. All that they are required to pay is a proportionate share of the operating cost, which is very small.

APR 24 1919

In Morgan County, boys' and girls' clubs are growing tomatoes for prizes totalling \$100 for the best one-fourth acre plots. In this county the agent reports that when he asked for a small sum of money for prizes, two firms immediately subscribed \$150 and he declined other offers as no provision had been made for their appropriate disposal. The farmer in Marion County growing the best field of potatoes of 4 acres or more, yield and economy of production to be considered, will receive a prize of \$100 offered by an In-

members of the Better Farming Association contributed \$400 with which to buy pure-bred gilts of one breed, all bred to pure-bred boars. One gilt was given to a boy in each township. These boys were selected by a competitive examination on the care and management of pigs. The breed was selected by secret ballot at a public meeting after a county-wide campaign by breeders who stirred up interest that would have done credit to a close political race.

This fall, after the pigs have been weaned, each of the boys is expected to



War Times Production Increases Interest in Alfalfa

dianapolis bank. Everywhere the county agents have enjoyed the hearty cooperation of progressive business men and farmers.

Permanent agricultural improvement through live stock production is being sought particularly in the more broken counties in the southern end of the state. As lack of capital has been one of the greatest difficulties, bankers of many of these counties have started what are known as endless chain pig clubs to help stock the counties with good animals.

In Monroe County, for example, 40

return to the township organization 2 gilts if he saves as many as 4 pigs, and 2 gilts are included in the number. These will be given to 2 other boys on the same terms as the first. This chain will be continued at intervals of 6 months until the fall of 1920 when the surplus pigs will be sold at auction, instead of being distributed. At this time the originators of the club will be repaid without interest, and the extra money will go into a county fund for the promotion of agricultural education and rural betterment.

Dairy calves have been sold to boys

in several counties on promissory notes, to be repaid when the calves mature, the boys to get the profits. Beef calves were sold to the boys in another county where beef production was more in keeping with common farm practice. One township in Henry County has determined to make itself famous as a section breeding Shorthorn cattle. Any boy who can present a bankable note will be sold a pure-bred Shorthorn heifer, the note to be repaid when the heifer is mature.

Better farming associations which county agents have helped to organize are becoming increasingly important as factors in crop and livestock improvement, since the war has made such improvement a vital necessity. These associations include all persons interested in agriculture and country life development, the county agents acting as their paid executives. In addition, there are township organizations in many counties, which have charge of affairs that are of interest particularly to people of small communities.

About 150 farmers in each county are actively engaged in work on one or

more of the committees of the county associations, conducting the projects and demonstrations which the associations are forwarding, with the purpose of securing readily applicable information. For example, in Casper County, groups of men in several parts of the county who compose the committee on lime, have ordered carloads of lime and will report the results of their applications to the county organization.

Similar committees on livestock, corn, wheat, canning, gardening, dairying and other subjects are at work making available to the entire county the experience of every part.

Everywhere quick action has called attention to the position of county leadership that county agents are filling. Much of the petty objection that has hindered the work of county agents in the past has been overcome by the general satisfaction in the way that county agents have met the crisis, and are still continuing to assume the responsibility and provide the initiative for community programs that are making farmers more prosperous and farm life more agreeable.



Wheat Yields Have Been Doubled by Fertilization

BEEF CATTLE AND PERMANENT AGRICULTURE

Future Meat Production and the Maintenance of Soil Fertility

GILBERT GUSLER, Department of Animal Husbandry, University of Illinois

SO much has been said and written during the last few years about the woes of the beef cattle men that one wonders whether the impression has not lodged in the mind of the younger men that there is not, and will not be, either opportunity or profit in that particular form of meat production.

For permanent farming some form of livestock seems advisable, not necessarily because of the profit which it may return as an industry by and in itself, but rather as a factor assuring the profitable operation of the farm, especially through labor distribution, the disposal of crop by-products, and the maintenance of soil fertility. So far as known, all permanent systems of farming established over wide areas have livestock as the basis.

A farmer may become well-to-do by losing money in feeding cattle each year. The paradox is easily explained in that the larger crops and more complete use of roughage, which exceed by weight the quantity of grain grown, may more than offset the loss upon the feeding operation itself. After all, poverty is a rare commodity among the habitual, intelligent cattle feeders of even recent years. A prosperous Kentuckian is quoted as saying that he never made a dollar directly in cattle feeding, but he never made any money farming until he began to feed cattle.

Instead of condensing and converting the farm by-products and at least a portion of the grain into meat and milk, badly needed for dietary rotation, the farmer may sell his grain, and plow under his crop residues and legumes along with a phosphate fertilizer. But it takes the strength of much conviction

to plow under clover which is readily salable, and unless livestock is kept, such materials are apt to find their way to market. Furthermore, since so much of the grain is consumed by livestock, if everyone tried the above system, it would have difficulty, because of the lack of demand for the grain to be sold.

Evidence is at hand that more fertility actually is restored to the soil when the crops are fed along with some purchased nitrogenous concentrate than when the grain is sold and merely the roughage is plowed under. It has been shown, too, that the crops grown on a fairly fertile soil are sufficient to feed enough steers to provide an application of 8 tons of well-preserved manure per acre once in a 3-year rotation,—enough to insure the constant upbuilding of the soil.

Granting that some form of livestock is advisable, the particular kind to select is up for decision. Probably more than one kind will be kept on most farms, but the leader should rightly be determined by one's inherent preference for it, not altogether on the basis of possible profit, although what one prefers is likely to be most profitable. The decision is made to be a farmer rather than an engineer or lawyer, not because farming offers promise of a larger competence, but because one chooses to live the life of a farmer rather than something else.

Now, can the young man who chooses to concentrate his livestock efforts upon beef cattle make it go, or is he upon a cold trail and foredoomed from the beginning to fail? This is written not as an effort to swing the pendulum of

thought in the direction of beef production as against other forms of stock farming, but as a word of reassurance to the possible young man of "beefy" tendency.

It probably is somewhat unsafe to argue from the past in view of the extensive changes which have come over Ohio agriculture in the last 50 years, but it may be well to point out that prior to the opening of the western range, Ohio seemingly had permanent stock farming in which beef production

up in the cities, with higher prices for dairy products, for corn and for land. Though the beef-eating population was increasing all the time, the range itself caused cheap beef for a time so that Ohio could not compete to advantage. Rather, the Ohioan "skinned" the land and sold corn, or produced milk, for the fertility question was always present, while still others tried finishing thin, range steers.

The changes did not stop with these. The next steps were homesteading



Feed Lot on an Ohio Farm

was an important feature. Shorthorns were imported, broad-backed beeves were produced, and the swine industry centered about Cincinnati. It was here that farmers first came up against real corn-belt conditions. If there had been no range or no United States beyond the corn belt, we would probably know today just what place beef production is to have in the agriculture of the future. But the country was broad, as well as young and growing. The population flattened out to cover all of it. Almost simultaneously came the piling

about the cattle watering places in the west, the development of diversified farming in what had been a country of free grass, an increase in the beef-eating population of the range and Pacific coast states, which must be supplied before any surplus comes east, while eastward the growth of population taxes all sources to supply its meat demands. While conditions in the corn belt will never swing back into the position held before the range opening, there is a strong movement in that direction.

Those who have a world-wide view of the situation say that there is no new area capable of disturbing our conditions again as the range did for a time.

Our agriculture pivots about the corn plant. The corn belt, because of its enormous crop-producing power, will probably continue as the most important geographical unit in meat production in which beef cattle will have a place. While the future per capita consumption of beef is entirely a matter of conjecture, the condition in the beef-consuming, densely-populated island of Great Britain warrants the belief that beef is likely to continue in our dietary. In short, as American agriculture becomes stabilized because of greater age and the more nearly complete utilization of its lands, there will be more of opportunity in beef cattle.

The producer of beef unquestionably enjoys certain advantages peculiarly his own, just as does the swine producer or the dairyman. Beef cattle are distinguished for their ability to consume much coarse, dry feed, while requiring for their care a minimum of labor and exacting attention. The small amount of housing needed affords the best opportunity to combat tuberculosis, the indoor scourge of all cattle kind; otherwise, they are comparatively free from devastating diseases. A large equipment investment must be rated as mistaken kindness and a nearby market is not necessary for the advantageous disposal of the product. Their manure is easily conserved. Other meat-producing animals surpass them in the smallness of food requirement for a pound of gain, but the consumption of much coarse roughage by cattle, and the production of hogs as an adjunct to the cattle receiving grain are partial offsets to this disadvantage.

The choice lies between (1) steer

feeding; (2) breeding and finishing; and (3) the production of purebreds.

Simon-pure cattle feeding offers certain advantages in that the use of pasture on high-priced land can be avoided; there is a chance for speculative profit since the cattle can sometimes be bought cheaper than they can be raised; and if conditions warrant selling grain rather than making beef, it is possible, ignoring the fertility phase, to quit for a year. But success depends much upon ability to keep track of the market and the making of good "buys." Furthermore, while the west may never finish all of its own cattle with grain produced locally, yet such is the tendency, so that there will be fewer and fewer range feeders available on the open market. Most of the thin cattle leaving the range will go direct to corn-belt feed lots rather than through a central market, with a consequent addition of 2 commissions and other charges to their cost. The corn-belt feeder may establish, with a range producer, a contract for permanent relations of that kind, but the system can not be general and permanent for a large number. The cattle must be fed somewhere and the uncertainty of the range supply together with its rising cost, the speculative character of cattle feeding alone, and the needs of a really permanent year in and year out business, point to the corn-belt cattle man breeding and finishing his own beasts.

Unquestionably, there is a worthy future for the constructive breeder working with the beef breeds. Wherever beef cattle are kept, pure-breds are needed to boost the average. The range has habitually turned to the corn belt for its bulls, our own south and east adjacent to Ohio are going in for beef production, stupendous prices are being paid in Argentina, while Australia and

South Africa are prospective markets for American pure-bred beef cattle. The national, state, and local organizations for breed promotion insure the ready sale of the surplus of even the smallest beginner.

No matter which form of beef production is chosen, to attain the fullest measure of success, the enterprise must be carefully managed. More must be produced and at lower cost than has been the custom of beef production in the past. If the unit cost is kept low, the profit will be greatest in good years and the loss least in the hard years. Silos, scientific feeding, and selected individuals, will be the means of wasting less and producing more. The feeding value of no roughage will be ignored and perhaps more labor may be used than formerly in order to produce the

necessary feed upon a smaller area, and the manure will be carefully conserved.

Even for steer production, the effort will be to breed to improve. Selection should be on the individual basis, keeping none but profitable breeders, the animals of vitality, capacity, prolificacy and milking ability which will give the greatest return for the feed consumed, and whose offspring prove themselves fit in the high pressure, early-maturity test in preparation for the market. The economy of gains, as measured at least by the rate of gain, should be satisfactory. Perhaps economy of production will make new progress when energetically and intelligently attacked from the side of inheritance. The creator of new cattle values of such a character will have made a contribution as great as any could make.



University Barns From Top of University Hall

FALL PLOWING OF ORCHARDS

Experiences in New England Prove This Practice Economical

J. H. GOURLEY, New Hampshire Agricultural Experiment Station, Durham, N. H.

BECAUSE of the stress of spring work on the farm and in the orchard as well as uncertain weather conditions, fruit growers are attempting to do more of their work in the late fall instead of the spring, and it has been found quite satisfactory. For instance, to plant apple trees in the fall instead of the spring, except for a very unusual instance, is quite as satisfactory and often more so than spring planting. It is, of course, necessary to get orders for trees in early and obtain your shipment before the ground freezes up. In fact some trees set here at the college in the fall of 1913, which was followed by a very severe winter, came through without any injury whatever and the same has been true with many ornamental plants. In some instances a certain amount of pruning is done in the fall, but we would prefer early spring for this work, at least in this region, however, it would not be surprising if more fall pruning of mature trees would be done in the future especially in the milder climates. Some growers also advocate spraying for scale in the fall, and others think they obtain good results by spraying in the fall for peach leaf curl, and so we might multiply instances of orchard work which can be done in the fall.

Fall Plowing.

The practice of fall plowing has interested me for the past few years owing to the very late springs in this section of the country, and I have been observing the results of others who practiced it with considerable interest. The chief thing that interested me was whether any injury resulted from the

practice, whether winter injury resulted to trunk or branches, for the practice would be successful or otherwise depending pretty largely on this point.

Last fall I determined to fall plow one of our experimental orchards, which is composed of Baldwins about 30 years old. We finished plowing this orchard on December 5, which is quite late for this section, but conditions for fall plowing were exceptional last year. This spring I watched the orchard closely for evidence of injury, but none appeared and I considered the time saved this spring was well worth the while. In 1916 it was the 27th of June before we could finish plowing this same orchard, due to excessive rains, and that is just about two weeks before time for it to be seeded down to a cover crop. Usually we get it plowed early in May, but spring weather conditions are very uncertain and fall plowing would seem to be a big advantage to us.

I recently visited one of our most successful orchardists, and among other interesting things was an orchard which he has been plowing in the fall, just before the ground froze up, for several years. It was an old orchard between 80 and 90 years old, that had been cut back and an entire new head grown on the trees. They have been bearing well for several years and look very vigorous at the present time. The soil is gravelly in nature, and easy to work, while the contour of the land is rolling. The owner says he has never seen any evidence of injury from his fall plowing and finds it quite an advantage. It is his habit to go over the ground with an iron roller after plowing to fa-

facilitate spraying operations in the spring.

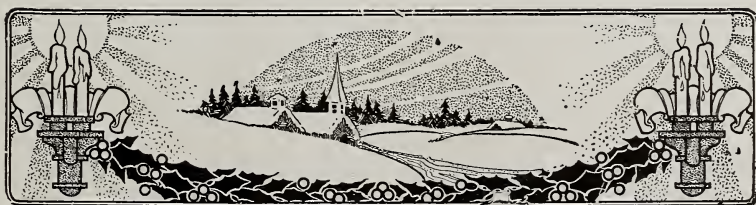
In the famous Annapolis Valley in Nova Scotia, a large number of growers practice fall plowing in the orchards and feel that the practice is entirely safe and saves valuable time in the spring. Buckwheat is used as a cover crop in that section more than anything else, so there is no special point to leaving it on the ground after it matures up. From casual observations there seemed to be as many in that section plowing in the fall as in the spring. The same thing is being advocated for New York state where no injury appears to result, so that the evidence seems satisfactory for many conditions. It is quite likely that there are sections of little snow and where the land is subjected to washing in the winter where such a practice should not be considered, but in many such places it is likely that the grass mulch system would be better adapted to their conditions and no plowing at all need be practiced.

The advantages which may be assigned to this method of handling orchards are that there is usually more time in the fall for doing the work than in the spring, and that the weather conditions in many sections make it uncertain as to just when the plowing can be done if left until spring; to these we might add, that the plowing can often be so done that wet land will be partially drained by the furrows which act as open drains and avoid the water standing in the orchard. This latter, of

course, would apply only to rolling land for pockets would not be drained by this system. It also allows the land to lie in the rough over winter and mellow or break up in the spring through the action of freezing and thawing. In a section where the winters are severe the soil which can be thrown up against the trees in plowing makes one of the best protections against winter injury that can be obtained. This fact is well known and practiced by nurserymen and makes an additional advantage of fall plowing.

Among the disadvantages that might be cited are: that a cover crop such as rye, clover or vetch would make some growth in early spring before plowing time, and hence this extra vegetation is lost, also the ground in some years is so dry that plowing is impossible, or it may freeze up before the plowing can be done. To these objections we might emphasize the one which is commonly heard against plowing the orchard at all, namely, that the land is so soft in the spring that extra difficulty is encountered in getting over the ground for pruning and spraying operations.

While each man must determine for his own conditions whether such a practice would benefit him and whether his soil and other conditions are favorable, yet we believe plowing as well as some other orchard operations can, at least in part, be transferred to the fall and thereby help to distribute the work more evenly over the year and utilize horse and man labor to better advantage.



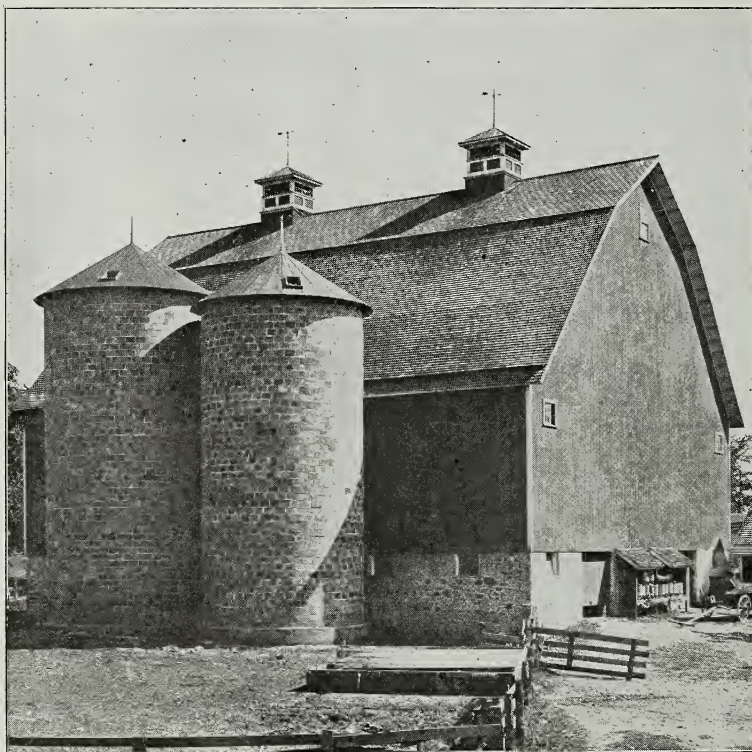
DAIRYING IN OKLAHOMA

Development and Advantages of the Industry in the South

C. A. BURNS, State Dairy Association, Stillwater, Okla.

THE coming of the dairy cow into Oklahoma is saving the state from destruction in disappearing farm fertility and a decrease in land value. The opportunity for dairy farming in Oklahoma is being more and more realized by the farmers of the state each year. At present, it is considered a cotton and

ent year. Another more noteworthy feature is the fact that many of these dairy cows are pure-bred or high-grades which is a great step towards success for the Oklahoma dairymen. There is no doubt but that the dairy cow is gaining in popularity and sooner or later will replace in large part, the



Silos Will Provide Winter Feed

beef producing state. However, it is believed by many that Oklahoma will at some time rival even some of the leading northern and eastern dairy states.

In 1916 there were 3,878 dairy cattle shipped into Oklahoma, and it is believed that even a greater number have been brought in so far during the pres-

ent year. In 1911 there were 531,000 dairy cows in the state valued at \$37.00 a head, and in 1915 there were 494,000, valued at \$52.00 a head. One or two exceptionally dry years during this 5 year period forced many Oklahoma farmers to sell their herds, because of feed shortage, but in all probability it was a good thing for the in-

dustry, as many of these herds which went to the block were of inferior quality.

Natural Advantages for Dairying.

There are certain natural advantages that the state has, e. g. luxuriant growth of pastures, forage crops, alfalfa and corn, which together with a rather mild climate, give Oklahoma better opportunities for dairying than many other sections. The alfalfa crop is especially useful, as this is considered almost indispensable in the feeding of dairy cows.

There seldom comes a year that enough roughage could not be raised on the farm to support an average herd until the green plants come again. In case the corn crop is a failure, good silage can be made of the drouth resisting grain sorghum crops such as feterita, milo and kafir.

There is, perhaps, no better combination of feeds for cows than alfalfa, silage and ground corn or kafir corn, together with a little cottonseed meal. All of these crops are successfully grown in Oklahoma and when placed on the market in the form of dairy products will return a much better profit than if sold as grain or forage. The mild climate which prevails in Oklahoma is another advantage for the dairy business, giving a longer season for pastures and requiring less expensive barns for housing the cows during the cold months.

In the case of a one-crop farmer, who raises cotton or wheat, and his crop fails, the bills for that year are usually left over to come out of next year's crop, thus making it extremely hard for him to catch up. This is the thing which causes much dissatisfaction among the more energetic, progressive young men and boys and makes them want to leave the farm. Thus, only the less aggressive lads are staying on the

farms under such conditions. What the Oklahoma farmer needs is not the abandonment of cotton and wheat growing, but the weaving into the farming system of something that will in itself be profitable and also furnish ready cash throughout the year.

Dairying is meeting these requirements in many instances as it is adaptable to the conditions of the large and the small farmer, whether he owns or rents the land. Dairying is a cash business, furnishing a sure and reliable income, making possible the running of the farm on a cash basis, thus saving the high rates of interest paid for money on short loans, and high prices charged for supplies bought on credit. The good dairy cow is a source of constant daily cash income and practically always more or less profitable even under the most adverse conditions. This is a great encouragement for the more energetic young men to stay on the farm as they see the possible opportunity for progress in the business of dairy farming.

Dairying Makes Land Owners of Tenants.

It is generally believed that permanent, successful agriculture is not based on a system of tenantry, but rather on a system in which the farmers are the land owners. If comparison of the grain and dairy states is made, it will be seen that the dairy states are further removed from the tenant system than the grain states.

The price of land in Oklahoma is very low. Good land may be had for \$25.00 an acre and upward which is an inducement to the small farmer to own some land for dairy farming. It may be safely said that dairy farming is a business which grows from small units. The foundation of the dairy business is the small farmer, with limited means,

who seeks to gradually increase his capital and improve his land.

There is probably no product on the market that finds such a ready and open market with the price so uniform throughout the year as does milk, sweet cream, cheese, butterfat and butter. The state of Oklahoma necessarily imports thousands of dollars worth of dairy products annually because of the lack of production and manufacture within the state borders.

These favorable market conditions make the opportunities for the dairyman greater and should not be overlooked. At present, ordinary market milk is worth from 10 cents to 12 cents a quart which is \$4.65 to \$5.58 per 100 pounds.

Butterfat in first grade cream so far this year has ranged from 31 cents to 43 cents a pound, which is a good average price. These prices for dairy products are a fair inducement for men to go into the dairy business.

There is no doubt much need of improvement of the dairy stock as it is found in the state at present. It is fairly safe to estimate that $\frac{1}{3}$ to $\frac{1}{2}$ of the dairy cows of the state are wholly unprofitable and many of them are even kept at a loss to their owners. Perhaps there are but few herds kept at a loss or without profit but it is safe to base the net earnings of the dairy on the herd as a unit. The value of the herd as a profitable herd should be based on the individual cow. The only way to know what each cow earns in the net profits of the entire herd, is to weigh the milk and test it at least one or two days each month. If a reasonably close record be kept of the feed consumed this method will show the individual's record at the close of the lactation period, and from such an individual record it may be determined

whether or not the cow is profitable. A milk scale and small Babcock tester may be had for a reasonable sum, and every dairy farmer should own them. Their use will soon pay for their cost by pointing out the unprofitable cows.

It is much better to receive net earnings to the amount of \$300.00 from 10 cows than from 15 or 20 cows. The money tied up in the extra 5 or 10 unprofitable animals should be invested in profitable cows which will pay for the work required to milk and feed them, as well as for the feed consumed.

In any community where there are as many as 500 or 600 cows, it is advisable to form a cow-testing association and hire a man that will go from place to place testing all the cows and weighing the milk at least one day in the month, keeping a record for each cow. This man should be qualified to help in figuring and compounding dairy rations and giving general advice along dairy lines. The annual cost per cow in such associations is usually from \$1.00 to \$1.50. The individual records of the cows are always worth a great deal more than they cost.

Dairy Cows.

The dairy cows of Oklahoma are still in the making, but the industry is becoming more efficiently regulated and protected as time goes on. There are many cream stations established by the centralizer plants all over the state wherever there is any dairy production. At present these stations are fairly well regulated by the law under the Board of Agriculture. The Board of Agriculture has laws and regulations regarding the sanitary conditions of all cream stations, creameries and places handling or manufacturing dairy products, which are being rigidly enforced. The cream grading law is in effect, making

a difference of 3 cents a pound for butterfat between first and second grade cream.

All herds furnishing milk and cream on the open market for direct consumption as such, are required by law to pass the tuberculin test each year.

Laws regulating the sanitary conditions of empty containers of any sort are in force, making it a penalty for any containers of any description used for conveying dairy products to be returned in anything but the best condition.

The Oklahoma Dairy Association has been in existence in one form or another for about 8 years. The organization includes all branches of the industry, men and women alike, as all branches are somewhat small as yet, and united effort is always stronger to accomplish results that are needed for the welfare of the industry. The object of the association is to secure the cooperation of the farmers, dairymen, creamerymen, or parties

interested in any form of the dairy industry and promote the social, moral, and business interests of its members, to procure and diffuse scientific and practical knowledge in all things relating to dairying and the manufacture of dairy products. The best dairy publications are being given to all members of the association, and any information that may be needed or solicited by a member.

It may be said that the natural advantages which the state offers for dairying, the placing of the farm on a cash basis, the encouragement offered to bright young men to stay on the farms, the inducement for tenants to become land owners, the increase in soil fertility, the open markets for dairy products, the room for improved dairy stock, and the extremely reasonable price of land in Oklahoma, are facts which surely lend much weight toward bright prospects for the future of the dairy industry in Oklahoma.



Foundations for an Important Industry

PRODUCTION AND CARE OF FALL PIGS

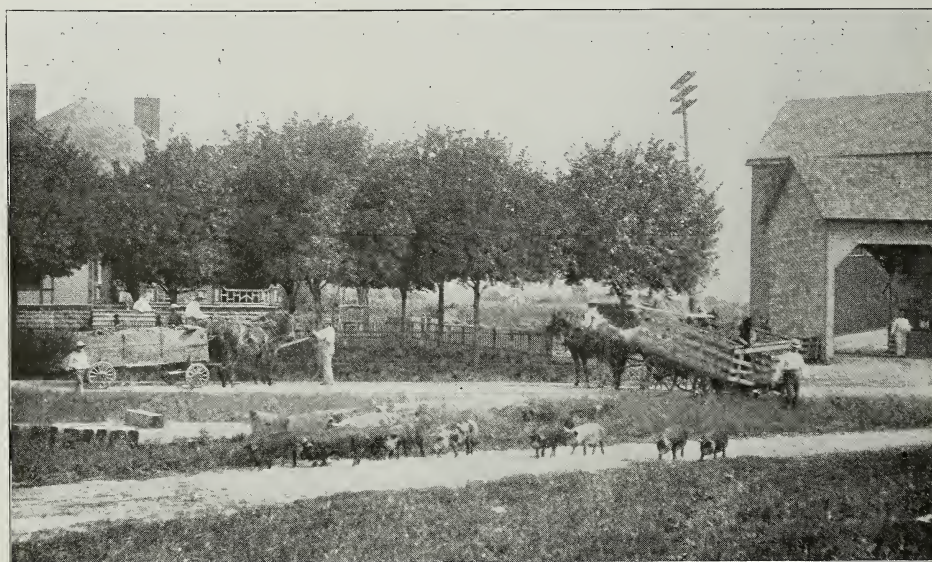
Poor Management Always Results in Disappointments

J. S. COFFEY, Department of Animal Husbandry, Ohio State University

IN spite of the abuses which have resulted from the shortcomings and disappointments of the fall pig, it still must be considered an important factor in the general process of pork production. The fall pig has been abused by many producers because it has been a disappointment, and it has proven a disappointment because of its abuse. Whether or not the fall pig actually has shortcomings is largely a question of

available feed are all units of the swine plant which must be kept working the entire year if greatest returns are to be realized. Therefore it is not a question of whether or not the fall pig pays, but it is a problem of making it pay by considering and solving difficulties in management which heretofore have not been properly attended.

The brood sow is without doubt the most important cog in the machinery of



Thousands of Such Hogs Have Gone to the Markets

management to be decided by the policies of the producers.

It is the prediction of the writer that in the near future the policy of producing fall pigs will be adopted by swine men the country over. In productive industrial pursuits, it is universally the policy of the superintending power to make the plant yield to its maximum capacity. The same policy must be adopted by the pork producer. The general equipment, the herd and the

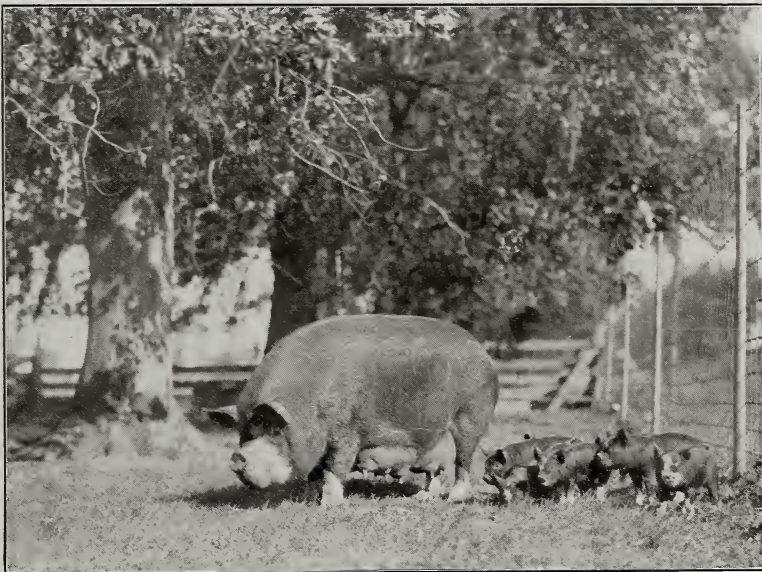
pork production. Undue consideration in her care, feeding and management is sure to make serious inroads upon her producing ability. If she is to produce a fall litter it must be kept in mind that this event is closely followed and preceded by the production of a spring litter. In other words, if the brood sow is to produce two litters annually, her life constitutes a series of events, all of which serve to sap her strength and undermine her vitality unless she is

properly managed. In order to impress upon the minds of swine growers as to how closely the important events of a brood sow's life succeed each other, the following table is given:

Bred for spring litter.....	Nov. 15
Pigs are born	March 8
Pigs weaned	May 10
Bred for fall litter.....	May 24
Pigs are born.....	Sept. 13
Pigs weaned	Nov. 8
Rebreeding date	Nov. 15

the brood sow because through it she maintains her body, develops the foetus, withstands the rigors of suckling a large litter and maintains her vitality generally. Ruggedness is necessary because vigor, activity and longevity of life depend upon it. Size is important because it is a desired inheritable quality and because ruggedness and feeding capacity usually accompany it.

However, a sow may possess all of the qualities enumerated above, yet fail to



Size, Ruggedness, and Quality Combined with Prolificacy

In most cases where fall litters are produced, the program given above is adopted. A young sow producing her first litter, or an older sow, which, through various influences fails to produce a spring litter, are exceptions. In view of the close succession of these events and of their devitalizing influences, it is essential that proper consideration be given to the selection of the brood sow. Her feeding capacity, ruggedness and size are factors highly essential to profitable husbandry. Feeding capacity must be characteristic of

successfully produce two litters of pigs annually due to the fact that her owner does not provide for her and manage her properly. The brood sow is usually best cared for during the winter period of pregnancy, because the swine grower commonly assumes that the spring litter is more important. After farrowing, the pigs of the spring litter are often left with the sow too long and she becomes badly emaciated, due to their continued nursing. These influences put the sow in poor condition for the production of a fall litter. She may

fail completely to breed, or her vitality may be so impaired as to result in feeble development of ova, causing the litter to be either small or weak, usually both.

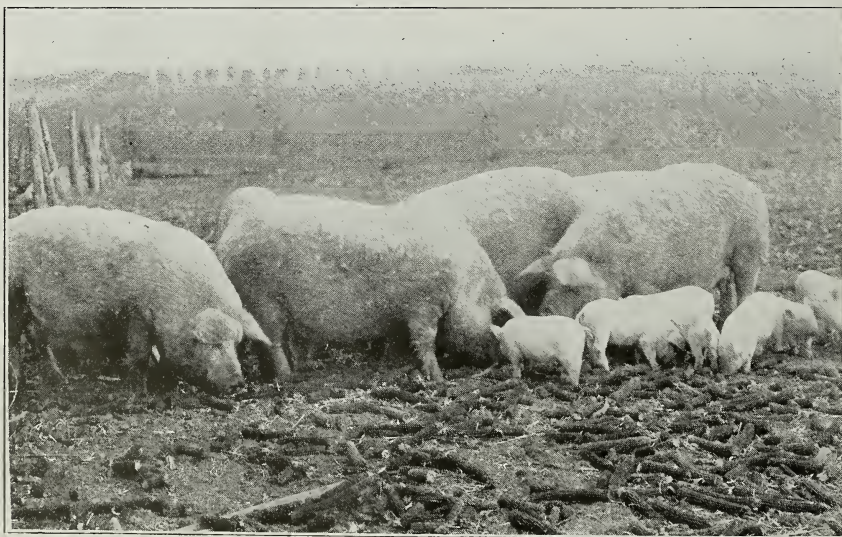
On the other hand the summer period of pregnancy has some distinct advantages if the producer will only use them. Green forage is available, and if adequately supplemented with grain feeds, serves admirably to properly condition the sow for farrowing. In addition the brood sow has free range which affords beneficial exercise and prevents infestations of parasites which are so common to closely confined animals in the winter.

However, it happens too often that the swine owner depends solely upon forage for the maintenance of his pregnant sows in summer. This is a mistake except in a few cases. If the sows are pastured on clover, alfalfa, soy beans or other leguminous crops, corn constitutes a good supplement and should be given to the sow in quantities ranging from 2 to 5 pounds daily, depending considerably upon the condition of the sow. If the available forage is less nitrogenous

in nature, tankage should supplement the corn in the ration, or if skim-milk is available it will serve quite as well as tankage.

The improper handling of the fall pig is a great contributing factor to unsuccessful production. Too often it is weaned away from the sow early to prepare her for fall breeding, and insufficient care is given it during the cold months of winter. The fall pig, immediately after weaning, should be given the best of feed in order to be well started before cold weather arrives. On the approach of cold days the provision of warm quarters is necessary and good feeding should continue. It so often happens that the fall pig is placed in with older hogs and made to shift for itself. As a result it fares badly and becomes unthrifty, undersized and incapable of utilizing feed profitably. If the following rules are properly considered the swine grower will more often find the fall pig an asset than a liability:

1. Do not permit the spring litter to nurse the sow over 8 weeks.



Money Makers If Properly Managed



Preparing for the Wooden Self Feeder

2. Give the sow 2 weeks rest before breeding for the fall litter.
3. Supplement summer pasture with grain.
4. Keep the fall pigs separated from the other hogs, feeding them well and providing them clean quarters.

THE AUTO AS A FACTOR IN COUNTRY LIFE

How It Has Affected the Development of Other Rural Improvements

C. R. WAGNER, Arlington, Ohio

MY life has extended over a period wherein the auto was only read of in the magazine as a dream in the mind of some overzealous experimenter. Then there came a time when I actually saw one running on the road. It was truly a wonder and was the direct cause of much speculation and argument by the natives. The case was finally settled by the loafers at the corner grocery: "Of course it could be made to go but only the idle rich can afford the luxury, and besides it requires a mechanical expert to start the darn thing and keep it going." Since that day the auto has been increasing by leaps and bounds. It may be found serving the idle rich, the banker, the farmer, the merchant, the doctor, the mail man and even the loafer likes to relate his daring deeds in an "auto."

Yes, the auto has indeed been a great

factor, not only in country life, but in city life, and it can be truthfully said in the life of our nation. First, good roads are the forerunner of civilization and it can truthfully be said that no single agency has contributed so much to the cause of good roads as has the automobile. It is no pleasure to drive either a horse-drawn vehicle or a machine over bad roads, but it is a great pleasure to drive them over good ones. So it naturally follows that boosters for good roads have in the past and will continue in the future to increase in proportion to the number of owners of machines, for just as sure as a person becomes an owner of a machine or even drives one, he will "right about fact" and talk and work for better roads.

Second, it changes to a very large extent, a man's nature. Once he tried to monopolize the whole road, now he is

willing to share it with his friends. The farmer, at one time, despised to give even passing room to the "devil wagon," but he now turns aside with a smile because he has one at home.

Third, it is the direct cause of change in the social nature of the whole family. Once the farmer was inclined to lead rather a hermit life on account of bad roads and tired horses, but now it is a pleasure to change clothes in the evening, get in the auto, lightly touch the starter, hear the regular pulse-beats of the engine, and feel the response that quickly comes from a well-kept machine. The cool ride brings pleasure to the pleasure seeker, rest to the weary, health to the sick, and a belief to all that life is worth living.

Fourth, as an educator it stands out preeminent. Geography and history are largely a nightmare to the youth, but when these can be coupled to a good auto, in the hands of a safe and sane driver who knows the history and geography of the country through which they are passing, these sciences become worth while. I have traveled in many states, both by rail and auto, and it is my observation that the railroad must always go by the backside of the farm, the forsaken parts of cities and towns, while the auto can go where you wish and when.

Fifth, it has been the indirect cause of the increase in value of every acre

of land in the United States. Some may be inclined to take exception to this statement, but when you take into consideration its ability to supply the means of investigation to the inquiring mind about the whole state, and even the nation, one must not forget the broadening influence that it brings to the seeker after knowledge.

I have long considered that the giving of a mortgage on a home for a machine, when one is already heavily in debt, is a questionable proceeding. But just as soon as your business matters are safe and you have the means in sight to pay for it, it is but justice to yourself and family to invest in a medium-priced car. Do not let the auto get away with your better judgment, or detract from the interest in your business. Rather let this be an incentive to more and better work as intelligent direction will make the auto fit into your life and labors. Speeding is not only dangerous to a car and its occupants, but a menace to the traveling public, and should be debarred from the highways.

Take good care of your machine, learn its construction, know the rules of the roads, and always give attention to city ordinances. If you do not own a car get one as soon as circumstances will permit, and then be a booster for better roads, better farming, better homes and home life.



VALUE OF FARM WOODLOTS IN THE WAR

How High Priced Coal May Be Supplemented With Forest Products

EDMUND SECREST, Chief Forester, Ohio Agricultural Experiment Station, Wooster

NEVER before in the history of Ohio has the value of the farm wood lot been brought home with such force as at the present time. Its value may be still more appreciated if we must face two or three more years of war as many authorities agree may be expected.

There are a number of good reasons for woodlot maintenance on many farms in normal times, but at the pres-

ent time the coal Survey predicts a coal shortage more serious than last winter unless unusual efforts are made to prevent it. Every foundry and machine shop has orders to keep them going night and day for some time to come, and they must have coal. There is plenty of coal in the mines, but how to get it out and distribute it is the problem. The present freight congestion is the limit-

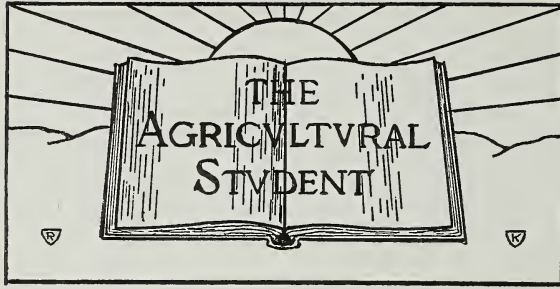


Built for Work in Attractive Surroundings

ent time some of its products are needed badly. In the first instance the fuel situation throughout the country is serious. There is not only a shortage of men to mine coal, but transportation problems are of still greater moment. Our country and our allies over seas will demand more than the normal imports of coal during the war. The shortage has been brought home to us during the past winter, when we paid a 100 percent premium for our heat over former years. The U. S. Geologi-

cal Survey predicts a coal shortage more serious than last winter unless unusual efforts are made to prevent it.

The rural population of Ohio consumes annually approximately 1,000,000 tons of coal, which requires 25,000 cars for distribution. If the woodlots of the state were drawn upon to supply locally one-half of the fuel needed on the farms and small villages, a saving in the use of 12,000 coal cars could be affected and devoted to other uses on the now overburdened lines of transportation. Again this would provide



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COLUMBUS, OHIO, SEPTEMBER, 1917.

EDITORIAL

THE ISSUE.

The Student has now entered upon its twenty-fourth year. Altho it is growing older as the years go by, each new year brings it under different management and control. Each year of its life has been a separate and distinct period which has had its own successes and failures. We are looking forward to a repetition of the same events.

But it would be hard to foretell what may happen to "The Student" in the coming year as these are changing times when no predictions can be made. As we look forward we can only hope that the dark war cloud may not be as destructive as it seems and that before long peace and good will shall again reign among the nations of the world.

This paper, which shall endeavor to boost everything that is for the benefit of agriculture expects the support of all

the students and faculty in the college. Of course all can not be working on the paper, but each can speak a good word for it and help to make it better with every issue.

Fellow students and alumni, give us your advice and counsel. Your college spirit should compel an active interest in the advancement and betterment of your paper which shall try to do its share to improve and uplift the cause of agriculture.

WELCOME FELLOW STUDENTS

Fellow students, we are glad to welcome you back to the college and campus. We are here under different conditions from what any of us have known before. Many of those with whom we have associated and become friends will not be privileged to be with us this year. Some will need to stay

at home for various reasons but the greater part of them are "somewhere in the service."

All of us wish that they could be here but we are proud of them as they have so patriotically answered their country's call. Those of us who are here must now do a little better work than before. The need for trained agriculturists will be greater than ever after the war and we should make the most of every opportunity now in order to be ready for the day when greater opportunities and responsibilities will be before us.

To those who are just entering the university, we bid you welcome. We believe that you have come here for a purpose and we hope that this may be the place where your plans may be made into realities. You have left your homes and are now in a new world where all is changed. Enter into it with cheerfulness and a smile and feel that you are among friends. Get acquainted as soon as possible, join some good society, go to the social doings and you will soon begin to feel that this is a fine place to live and study.

Let us all enter into this year's work with earnestness and sincerity, believing that we shall be rewarded in doing our duty.

TRAINING CHANGES ATTITUDE.

Many farmers have been heard to express their doubts as to whether all the effort and money that is being expended in the promotion of agricultural education was of any real benefit. No doubt there is a certain amount of waste as there is in all kinds of education but in these days of great national necessity we are seeing the beneficial results of this training.

Boys are not leaving the farm as frequently as they did a few years ago be-

cause the sentiment towards farm life has been changed in the right direction. They are being taught that the farm is the best place to live and are loath to give it up for the narrow life that they would need to live in the city.

When the students were permitted to leave school last spring to go to work on farms, many who had never lived on a farm were glad to get the chance to go there for the summer. From the reports that have been made most of the boys have been satisfied with the summer's work and their employers have a different attitude toward the agricultural college. Not only has their attitude been changed but when the boys take up their work this fall it will be from an entirely different point of view and their interest in the college should be greatly increased.

ATTEND TO MACHINERY.

It is not that implement dealers and manufacturers are trying to find an excuse to make sales that they are telling their customers that prices will keep on going up. Manufacturers are paying much higher prices for materials than they did a year ago but the prices of machinery have not advanced proportionately.

With the increased demand for munitions and war machines of all kinds the price of iron and steel must necessarily advance still more. Even if the government should fix prices on these commodities and thus prevent a further increase, the difficulty would not be overcome as the insufficient supply can not meet the increasing demand.

And yet with all this staring the farmer in the face, one can travel over the country and see thousands of dollars worth of machinery setting out in the open rusting away into uselessness. It should be realized that a few weeks

of such treatment will impair a machine more than a whole season's work. No one can afford to operate his machinery unless it is properly oiled and then when the work is done all tools should be repaired and housed in order to be ready for the next season. Good care and proper oiling will prolong the life of any machine for several years.

OUR ADVERTISERS.

Looking thru this magazine one must be impressed with the quality of the advertisements. They are all from reliable firms upon whom our readers can depend for a square deal. If you are looking for the best our advertisers are the ones to patronize. They realize that this magazine is read by the best class of farmers and students, and are therefore glad to advertise the best that can be had.

Our local advertisers deserve the support of all the agricultural students. When you go into their stores just mention "The Student" and say that you saw their ad in it. They will appreciate it and you will secure better service besides helping "The Student" to be of more real value.

SELLING BREEDING ANIMALS.

During the present time of high food prices and a general shortage of stock, there is a great deal of agitation along the line of not selling the females from the breeding ranks. This is a wise rule but there are exceptions to every rule. Any law which would prohibit the sale of all females for slaughter until advanced age would work a great loss to the stockman as well as to the country as a whole. Among all herds, whether horses, cattle, sheep or swine, there are certain females that are not profitable from a breeding standpoint. They would be of more economic importance to the country as a source of food or

power than as a non-profitable consumer on the farm.

In many instances these females may be barren and non-producers either from mechanical causes or as a result of some infectious breeding disease. In the first instance she is a loss because she does not reproduce her kind, and in the second instance she is a greater loss because she diseases healthy females so that they do not reproduce. In other cases the females are of a kind that it would be undesirable to use for breeding stock. Stockmen should take every precaution to keep the profitable females on the farm and keep as many as possible of them reproducing their kind, but they should not lose sight of the fact that some females would be of greater value to the country on the block than on the farm.

SELECT YOUR SEEDS.

Such a demand for seeds was created during the past spring and summer that the supply has been greatly diminished and unless more farmers than usual save seed for the 1918 crop, prices will be higher than before. Everyone believes that next year's crop should be the largest possible, but the first thing to be done in raising that crop is to have good seed. The best way to do this is for each farmer to carefully select and store his own seed. This will require a little extra work, but usually the best farmers in every community grow their own seed.

Seed from nearly all of the garden vegetables can be selected while the plant is yet on the ground, and potatoes can be sorted as they are dug. This gives a chance to select those from the most prolific parents bringing about a gradual improvement in the crops. The small grains that will be used for seed should be cleaned and stored where they will be free from rodents and in-

sects. Altho it is not possible to select these with the same care as the potatoes or garden vegetables there is usually some part of the field that has made a better growth during the season and which is usually of better quality. This can be kept separate so that enough for seed can be secured with a little extra work.

Careful selection of seed from the corn field is a profitable investment and should not be overlooked by any farmer. The seed is usually gathered by going thru the field in late September and selecting each individual ear upon its merits. Consideration should be given to the height of the ear and stalk, the environment of the stalk, the diseases found upon it and the maturity of the ear. If the first ears to ripen are not used for seed, the corn will keep getting later and later in maturing. Remember that seed can be grown cheaper than it can be bought, and then you are always sure of what you are planting.

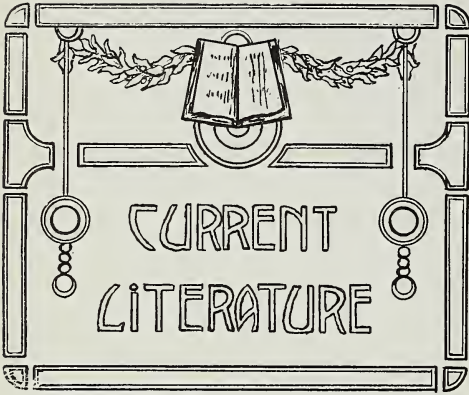
IMPROVE YOUR OPPORTUNITY.

This fall will be a particularly favorable time for those who are in position to enter a college or university. Many look at this from a different standpoint but let us consider the matter before arriving at any conclusions. In the first place, the class rooms are not going to be crowded as much as usual because so many of the juniors and seniors have enlisted in the service. And it is a fact that many of the colleges have been too well filled in the past few

years. Then, too, this will be a year of economy because it is becoming fashionable and respectable to economize in every way possible. To those who do not have plenty of money, and there are many of them in the various colleges, this may mean much.

Let the boys and girls who are tempted to stay away from college this year inquire of those who have been thru college and get their opinions, and then let them note on every side the many who now regret that they never used the opportunity that they once had to get an education. The best things in life are obtained thru sacrifices, and education is one of them. Many will think that they can go to school in later years when the war is over, but observation teaches that the longer an education is delayed the weaker becomes the desire for such training.

Some may stay away because they are being offered high wages for labor, but are they really high when you compare them with the wages available at the other end of a college course? Money invested in an education usually yields a rate high enough to pay back the principal in a few years. But the money question is not the main one in obtaining an education. It is that broader view of life, deeper interest in things worth while, and the greater enjoyment and appreciation of the blessings of life that make a college education what it is. Before you decide not to enter college this fall, think over these things and remember that an opportunity lost is gone forever.



"Productive Plant Husbandry," by Kary C. Davis, is the title of the first volume in a new farm life series. This book is particularly for school use and is to be covered during one year. The beginning is made by giving the principles of plant growth and breeding, followed by chapters on seeds and propagation. Soils, drainage and crop rotation are treated before the grasses, legumes, roots, grains, fruits and fibre crops are discussed. The concluding chapters are upon weeds, insects, plant diseases and the business of farming. Field and laboratory exercises, questions and references are added to each chapter. 462 pages, 312 illustrations, \$1.75. J. B. Lippincott Company, Philadelphia.

"The Soldiers' English and French Conservation Book," by Walter M. Gallichan, contains hundreds of useful sentences and words which will enable the American soldier to converse with the French and Belgian allies when they go to France. It is a complete book of phrases referring to landing, marching, aviation, trenches, wounded, money and weights. This little book will be of real service to the American soldiers when they arrive in France.

128 pages, \$0.30, J. B. Lippincott Company, Philadelphia.

"Vegetable Forcing," by Ralph L. Watts, was published after many years of experience, study and observation. This book is especially recommended as a text, but it should prove valuable to all practical growers, whether producing for commercial purposes or for the home table. There are 11 chapters devoted to general questions such as greenhouse construction, soil preparation, insects and diseases, management and marketing. Then follows 8 chapters on the most important vegetable forcing crops. A few miscellaneous topics are discussed including frame crops and mushrooms.

400 pages, 158 illustrations, \$2.00. Orange Judd Company, New York City.

"Greenhouses: Their Construction and Equipment," by W. J. Wright, has been recently published to satisfy the demand for information about greenhouses, which has come from owners and operators as well as to serve as a text book in the agricultural colleges. The first chapters deal with the structural materials, beds, benches, walks, painting and glazing. Then the hot water installation, boilers, fuels and flues are discussed, followed by a treatise on concrete construction. Plans for greenhouse construction, ventilation, and irrigation are also given.

286 pages, 131 illustrations, \$1.60, Orange Judd Company, New York City.

"An Ice Cream Laboratory Guide," by W. W. Fisk and H. B. Ellenberger, is not a text book, but a manual to help students to better understand the principles upon which the manufacture of ice cream is based. It contains 33 exercises which cover every part of ice cream making and testing. Many recipes are given which should be of use in every household.

92 pages, \$0.60, Orange Judd Company, New York City.

Home Economics Department

BUSINESS IN THE HOME

BERTHA EDMONDS, New Vienna, Ohio

THE problem of the housekeeper is one of the chief interests of all American people today. Our housewives study it, it is taught in our schools and the public is taking interest in this most important occupation of our strenuous life. Women in Europe have long practiced many of the arts of economic management, while here we are just beginning. Their needs made them more thrifty and wise just as our need will teach us more and better methods.

Since home keeping is our primary business it is necessary that we perform this work with the strictest regard for business principles. There has been a great change in business life during the past few years, and it is the thinker with initiative who leads in the ranks of today. Can you imagine one of our present captains of industry saying that he did a thing just because his father did it or because it was a custom? If this would be absurd for the business man to say why would it not be equally so for the mother business?

We should know why and for what we do a thing, and then plan the best way to do it, instead of going thru our tasks involuntarily because of force of habit. We should know where we stand, what our stock will average, what our working capital is and what our net earnings are. The business home keeper is not only a wife and mother, but a scientist, financier and physician. The home business must provide more clothes and food each year and each woman must meet and solve the problems of her family.

Life is more complex and no matter how simple our tastes we can not pursue the easy gait of the old environment. There is more money as everything we sell brings more, but everything we buy costs more and our needs are greater than they once were. It would be a real hardship for the people of today to live the simple life that we so often laud in song and story. But the mothers of that day understood and practiced home economics—they made the best of everything they had.

We business home keepers have had easy years. There are factories for the canning, mills for the spinning, and creameries where we can unload the task of butter-making. And this has been done without direct effort of the mothers. We must have these things and many more and they will all be paid for in the home. The manager of the factory home must understand her income, the value of her labor and her stock in trade, for she it is who must buy. One thing should be remembered—the unnecessary waste of material is worth serious consideration.

There are many times that the business mother should impress upon the minds of her children and the mother should have a keener insight into the ability and talents of her children than any one else. It is the mother that moulds the business brains of the world and she will see that each child is given a chance to do the work for which it is best fitted. The real success in life is peace and contentment found only in congenial work.

The question of waste should be an

absorbing one for the home keeper. How often do we see a family struggle thru the early years with a small home and then when the children are ready to leave the savings of years will be spent for a large house that will not be used. Is there anything in the world so lonely as unoccupied rooms? No matter how handsomely furnished or beautifully kept they are never home-like. It is not wise to take a small business and scatter it over a large space just to make a show, because it is a waste of time and money to keep them in repair. Material wealth is not to add to our repute nor to our power over others but only to a life more abundant.

To know where we stand we must

keep books and then at the end of the year we can make a shrewd guess as to our income and expenditure. We must be careful buyers, know our markets and judge materials but that judgment must not be based on price or our neighbor's purchase. We should always pay cash as the discount for cash amounts to a great deal by the end of a year.

The business home keeper must look beyond her own doorway. She must have the far seeing vision that will provide for generations yet unborn as well as her regular problems of daily life. It is this gigantic work that the business woman in the home undertakes and that only the business woman with the mother love can perform.

PREPAREDNESS FOR THE HOMEMAKER

MISS PEARL DORSEY, Moundsville, W. Va.

WE hear much these days about preparedness as a war measure, efficiency in the business world and conservation of our natural resources but the women of our land must have and use all of these if they would contribute their part to our national life. If a bold peasantry is a nation's pride, being trained and prepared for our work is our means towards the end.

The home maker should first clear her mind of hindering things and get a wholesome clear-cut idea of her work and her opportunities. Her aim is a happy, healthy efficient family. She works towards a sanitary congenial place in which to live. The cost of materials, time and strength is the first consideration. It should be beneath no woman's dignity to count the cost for it is mere honesty to live within one's means and to have something for the rainy day.

Foods

It has been shown that the smaller

the income the more in proportion is spent for food for man must eat to live. We must remember that the health and efficiency depends largely upon the quality and amount of food as well as the regularity of eating. Our secretary of agriculture says that America wastes millions of dollars worth of food every year and President Wilson asks us "to correct the unpardonable fault of wastefulness and extravagance." Now is surely a good time to practice and study true economy. While the more expensive cuts of meat may have the advantages in juiciness and tenderness the cheaper cuts are as nutritious altho it takes more time and skill to prepare them. We can save on the farm by having a varied and continuous garden supply. Others save by buying in season. "Buy what we need, cook well only what we eat" is good practice.

Clothing

Unfortunately we are not like the sparrows that need only to dust and

bathe. The prepared home maker buys fit and suitable materials which the family needs—not always what they would like to have. “Needs first, desire afterward” is her motto. Cleaning, laundrying and repairing command her attention because a man can be a little more successful if well groomed and the woman a little more moral if decently clothed.

The barbarian adorns himself with feathers and skins but modern people dress for comfort and utility because it is possible to be neat and appropriately clothed whatever the work may be.

Shelter

A house that is handy and harmonious is a comfort to work in and a joy to those who live in it. Sunny and sanitary gives the home an air of health and hospitality. Conveniences, added as they can be afforded, save wear and tear on the home maker and allow her more time and strength to look after the well being of herself and family. She aims to have the house kept in good repair, the cellar sweet and as well ventilated as the bed rooms and everything tidy about the yard. The prepared home maker should have an interest in the location of the home, giving attention to the exposure, drainage and neighborhood.

Household Management

This home is her domain and the kitchen is her laboratory. The fire in the kitchen stove burns incense to the ideal in her mind of strong, disease-resisting bodies in the members of her family. She studies means and methods

to best to do her work, to accomplish the most with the least wear upon herself. There is a system about the work with enough elasticity to allow for the unexpected happening or guest. The hard tasks are distributed thru the week, every day having its routine. Housekeeping with her is a big business and every member of the family has his or her tasks that they may not only know how to do the various work but that they may feel the joy and responsibility of home making. The home making instinct is in every child but it needs early nurture and training which is the big and beautiful work of the mother.

Standard of Living

The needs and desires of each member of the family should be considered and all must know the worth while things of life and living. There should be no selfish spending of one at the sacrifice of the others. System, simplicity and sincerity should be the keynote of the home. Books, music, flowers, friends and recreation all contribute to a full, rich life. The home maker feels that her work is an inspiring profession, not drudgery; fascinating, not monotonous. It is made easier by utilizing modern science to preserve and increase health, thereby promoting happiness and prosperity. We can truly serve our state and nation by directing and developing the child mentally, morally and physically to its best; by conserving and improving the home and raising the standard of home making.

HOME CARE OF THE SICK

NELLIE WOODS, Greensburg, Penn.

IT is not every home that can afford the services of a trained nurse when sickness enters it. Then the care of the sick in that home falls upon the mother or some of the older members of the family and one realizes how essential it is to know something about nursing and the duties of a nurse. In many diseases the recovery depends more upon the care that is given the patient than upon the medicine itself. Accidents often happen in the home that need immediate attention, such as a broken bone, sprain, burn or cut. Knowing what to do and how may save someone a great deal of pain or may be life itself. Every one should know a few of the simple remedies to apply in such cases and how to make a person comfortable until more skilled services may be secured. In case of accident, or, in times of sickness in the home, keeping presence of mind will always aid in doing the right thing at the right time.

There should be a place to keep medicine in every home, if nothing more than a shoe box. All medicine should be labeled and all poisons made safe by fastening a piece of white paper over the cork. Some absorbent cotton, cheese cloth, surgeon's gauze, medicine dropper, thermometer, fountain syringe and a few good antiseptics should be in the box also.

The sick room should be the lightest and best ventilated room in the house, away from noise and unpleasant odors. A southern exposure is best as it is said that patients in the sunny wards of hospitals recover the soonest. The sick room should be well ventilated and aired thoroughly once a day. A fire place in the room is good for ventilation. With an open window one can

use a screen to avoid a draft, or place a window board under the sash. Muslin tacked over the window is an excellent way to ventilate a room as this will keep out all storms and drafts. The temperature of the sick room should be from 68 to 70 degrees, but it is better to have the room too cool than too hot. If a light is burning in the room at night, pin paper about the shade or place some kind of screen between the patient and the light to protect the eyes.

There should be no unnecessary furniture in the room. A few rugs are better than a carpet for the floor covering, as they can be taken out and cleaned and the floor washed several times a week with a disinfectant.

Wall decorations should be simple and restful and the window draperies of washable materials. Clothing, towels, napkins and linens used in the room should be changed frequently so that they are perfectly clean. The bed should be higher than the ordinary bed in the home, and of single width. Mattresses are always preferred to feather beds. A counterpane is used on top for appearances, but if you must economize in laundering, a clean sheet would do as well.

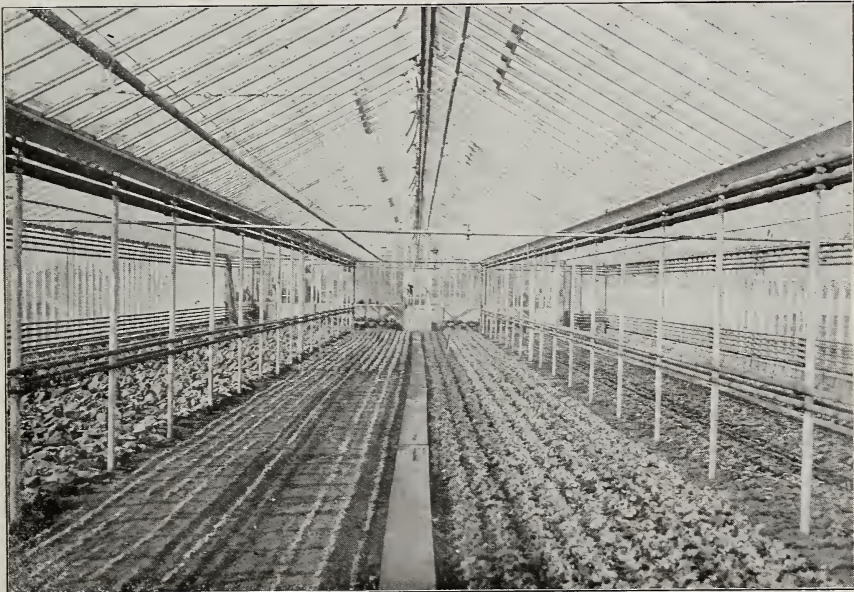
Making the bed well is an art not attained by everyone. The sheets are thrown in place either from the side or from the foot of the bed. Any excess in the lower sheet is brought well to the top and folded under, the corners being neatly turned and folded. The under sheet on the sick bed should be kept perfectly smooth and free from wrinkles. The draw sheet, made by folding an ordinary sheet lengthwise once, is laid across the bed and pinned

well beneath the mattress, any excess in length being at one side of the bed so that when necessary the fresh part may be drawn over under the patient.

To change the under sheet with the patient in the bed, move the patient to one side and roll the sheet close to his body. Then roll a fresh sheet lengthwise as far as the middle and place on the bed with its roll against that of the soiled sheet and the other half in place on the bed. Push these rolls well under the patient, then go to the other side of the bed and gently roll the patient back over them. Now remove the soiled sheet and smooth the fresh one. When changing the upper one lay a fresh sheet over the soiled one and draw the soiled one from beneath it. The patient often helps by holding to the fresh one while the nurse pulls out the soiled one from the foot of the bed.

Carelessness in giving the medicine may result seriously, so the doctor's directions should always be followed. If the medicine is poured out on the label side of the bottle the directions may be destroyed. The conversation should be cheerful, but no whispering or discussion of the case is allowed. The meals are served daintily and in small quantities with clean linen and pretty china. Soiled dishes and empty bottles are always unsightly in the sick room. Disinfectants should be used freely as they destroy germs while antiseptics stop their work without killing them or destroying their poisons.

Those most commonly used are: Bichloride of mercury for the hands, chloride of lime for the utensils, and carbolic acid for clothes and instruments.



Inside the University Greenhouse

SOY BEANS AS HUMAN FOOD

How They Should Be Prepared for Use in Our Diets

J. B. PARK, Department of Farm Crops, Ohio State University

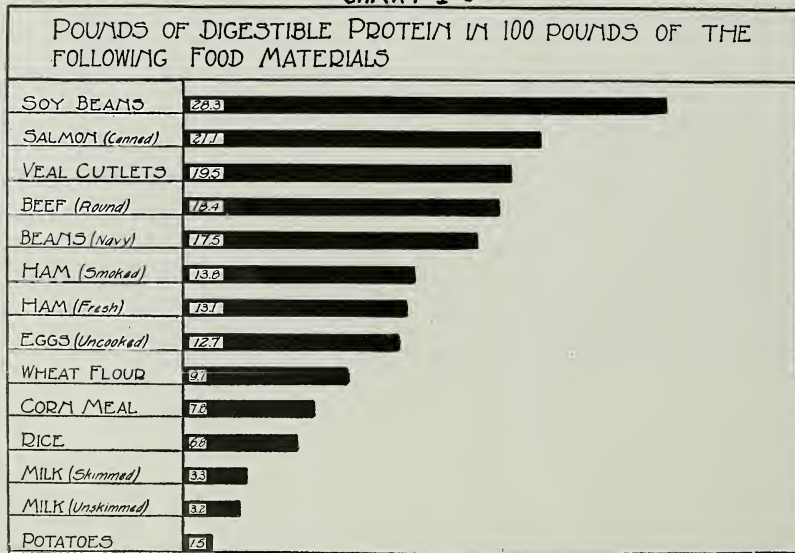
A DIFFICULT task confronts him who would introduce a new food into the homes and markets of a people. Argument and reasoning alone, however sound and convincing, fail to overcome the aversion of most people to eating anything new. To be sure we have learned almost against our wills to eat olives, grape fruit, shredded wheat biscuit, and to drink postum, but the producers and manufacturers can tell you how many million dollars worth of advertising was required to make people believe they like these things. The child elevates his pug nose in scorn at the vegetables which, altho he has never tasted, yet he does not like. Some of the sterner breeds of parents succeed in forcing down the unwilling throats of their children a few of the peas and earrots which are "so good for them"; or the more diplomatic ones, taking advantage of the poor child's weak point, will partially sugar-coat the pill by

making peas and carrots a prerequisite to cookies or candy. Whether the policy adopted be that of von Bethmann Hollweg frightfulness, or of the more humane note-writing type the end result is the same and the child emerges with a liking for peas and carrots.

When the child has become a man he puts away some of his childish things, but retains his aversion to new articles of food, especially if the new things offered happen to be inexpensive. However, when the name of a new article has glared at him from every newspaper, bill board and street car wall for a year or two, and the price has been put sufficiently high, his defense crumbles before the bombardment of "food that's shot from guns" or his will is pierced by the spear of the Spearmint and he surrenders to become a docile subject to his captors.

How dearly we pay for some of these much advertised foods is illustrated by

CHART I -



puffed wheat which the consumer cheerfully buys at 15 cents for 4 ounces. The world stands aghast when wheat sells for \$2.50 per bushel, but after the wheat has gone through a simple manufacturing process and emerges as a breakfast food we are quite willing to buy it back at the rate of \$36 for 60 pounds.

The fact is that new foods do come into use, but most of them are designed to enrich the manufacturer rather than

It is the purpose of this article to call attention to some of the reasons why soy beans should be given a place on the tables of American people. The composition of the soy bean is such that its place in the diet is that of a meat rather than of a vegetable. Look over a list of high protein foods including all kinds of meats, cheese and nuts, and you find none equal in protein content to the soy bean, which contains on an average about 36.5 per cent. The

CHART II
ONE DOLLAR WILL BUY

	Lbs. raw material	POUNDS OF DIGESTIBLE PROTEIN	Pounds of digestible carbohydrate*
SOY BEANS 3¢ per lb.	33.3	9.43	18.3
SALMON (Canned) 15¢ per lb.	6.6	1.40	1.7
VEAL CUTLETS 20¢ per lb.	5.0	.97	.79
BEEF (Round) 15¢ per lb.	6.6	1.20	1.8
BEANS (Navy) 5¢ per lb.	20.0	3.50	12.3
HAM (Smoked) 15¢ per lb.	6.6	.92	4.6
HAM (Fresh) 14¢ per lb.	7.1	.93	3.9
EGGS (Uncooked) 36¢ per doz.	4.1	.53	.81
WHEAT FLOUR 3¢ per lb.	33.3	3.23	25.2
CORN MEAL 2½¢ per lb.	40.0	3.12	31.1
RICE 8¢ per lb.	12.5	.82	9.7
MILK (Skimmed) 3¢ per lb.	25.0	8.25	14.4
MILK (Unskimmed) 4¢ per lb.	25.0	.80	3.4
POTATOES 1¢ per lb.	100.0	1.30	14.2

* Starch, sugars, and fats are stated in terms of starch for purposes of comparison

to benefit the public. The reluctance of people to substitute a cheap food for one which they are accustomed to use is illustrated by the recent refusal of New York's poor to use rice at a reasonable price instead of potatoes when the price of the latter became almost prohibitive. In spite of this strong tendency of human nature, under the stimulus of war conditions and high prices, many intelligent people are making an honest effort to use some of the cheaper wholesome substitutes for wheat, flour and meat.

fat also is high, about 17.5 per cent, and absence of starch increases the similarity to meat.

The question of palatability was long the chief objection to soy beans for human food. The Japanese like the strong flavor and they say that our navy beans are tasteless. To Americans the strong flavor of the soy bean is not pleasing and it was necessary to remove this flavor before the beans would be considered for food. The recently discovered method for accomplishing this is the very simple one of

soaking in water—not in just enough water to cover the beans, but in a large amount of water, 3 or 4 quarts to 1 cup of beans. This simple point is the key to the whole matter. Soaking in a little water as is done with navy beans does not remove the strong soy flavor; soaking over night in a large proportion of water, hot at the start, does remove it completely and leaves the beans with a mild agreeable flavor. After soaking, the water should be poured off, a teaspoon of soda added with enough water to cover the beans, and they should boil for 10 minutes. Without soda the beans will not soften, but remain hard and rubbery. Too long cooking in soda makes the beans mushy and the time can be adjusted to suit individual taste. The soda water should be poured off and the beans can then be boiled or baked and seasoned in a variety of ways the same as navy beans. One excellent method is to bake with pork and tomato catsup.

The soy bean has a number of distinct advantages over the navy bean. The yield per acre is larger, and also surer, since there are as yet no diseases which cause serious injury to the soy bean plant, while navy beans are quite susceptible to disease. Stored soy beans are comparatively free from insect attack. They contain 60 per cent more digestible protein than navy beans, and because of the absence of starch they do not cause formation of gas in the digestive tract. In addition to these advantages, the soy bean is, and probably will continue to be, cheaper than navy beans. There is now on the market a brand of pork and beans in which mixed soy and navy beans have been used, but there is no very good reason why navy beans should be added.

The number of food products which can be made from soy beans is many.

Altho relatively unknown in America, a number of these products are of first importance in the diet of the oriental nations. Space forbids me discussing these foods at any length, and I shall make only brief mention of some of them.

Soy bean milk is a water emulsion made by heating bean flour with water which produces a permanent emulsion of a yellowish white color. When this sours from bacterial action, or upon addition of acid or magnesium salts, a curd is formed which closely resembles cottage cheese. In the Orient this curd called *tofu*, is made daily at factories, pressed and sold to the people. It is their chief source of protein, and is really a very palatable article. The soy bean milk itself can be used in a great variety of ways. Chemically it approximates the composition of milk and is very much cheaper. It will, of course, never replace cow's milk, but it may prove to be a useful addition to our food materials.

Soy sauce, a dark brown, very salty liquid with an odor and taste suggesting that of smoked meat, is used for flavoring and is indispensable to all Chinese and Japanese kitchens. It is made from soy beans, wheat and salt, with the aid of a fungus, *Aspergillus oryzae*, and the process is one to two years long. This sauce is always served with chop suey and it is growing in favor with Americans for flavoring soups, gravies, rice dishes, etc.

Green soy beans served like green peas have an excellent flavor. They should be cooked in the pods in salt water and shelled before serving. They are difficult to shell while raw, but very easy after cooking, and the pods are not good to eat. Ripe soy beans when roasted and ground, make a fairly good substitute for coffee.



William H. Lapp, '16, has gone to the Iowa State College at Ames to become poultry specialist in the extension department.

Francis L. Morrison, '16, is now doing extension work for the department of farm management for the university. He is working in connection with the federal department at Washington. Mr. Morrison received his master's degree last June.

Leon M. Evans, '16, is operating a 300 acre farm near Rocky Hill, Ohio.

Floyd S. Delashmutt, '16, who was appointed as one of the special county food commissioners last spring was hired as county agent in Athens county. He began the work on July 1.

David P. Evans, '16, who was employed with the John Wildi Condensed Milk Company, has enlisted in the United States army.

William L. Frank, '16, has secured a position with the department of agriculture at Washington. He will be a specialist in the department of grain standardization.

Walter D. Hunnicutt, '16, who has been employed in the extension department during the summer, expects to engage in farming near Wilmington, O.

True Houser, '06, has returned to Germantown after spending 3 months in the food and crop campaign. He made a study of the diseases of wheat and clover in Darke and Montgomery counties during the summer.

Thomas L. Guyton, '13, who was teaching in the department of zoology at Ohio State University during the past winter, was employed in the entomology department at the Ohio Agricultural Experiment Station during the summer.

Jacob R. Stear, '16, has been assisting in a survey of Ohio wheat conditions with regard to insect enemies. This was conducted by the Experiment Station at Wooster.

James Edmonds, '10, who is teaching in the animal husbandry department at the University of Illinois, paid a recent visit to the college campus.

Edgar M. McElwain, '17, has been employed to teach agriculture and manual training in the high school at Perysburg, Ohio.

Edwin A. Risser, '09, and Louis D. Risser, '08, are farming near Pandora, Ohio. They are making a specialty of horse feeding, buying several horses during the fall to fatten for the spring markets.

Eldon F. Dailey, '16, is farming near New Albany, Athens county, Ohio.

John E. Schaffner, '17, is employed by the John Wildi Milk Condensing Company, at Horseheads, New York.

Allen Baker, '17, is farming near Veedersburg, Indiana.

Ralph W. Rundell, '17, was married on June 4, to Miss Ola Graham, of Columbus. He has been working on the Ohio State University farm during the summer.

J. Blake Koons, '17, has been employed by the Telling-Belle Vernon Milk Company at Cleveland.

Carl C. Lowe, '17, has been in the officers' training camp at Fort Benjamin Harrison.

William H. Gowdy, '17, is managing a 1200-acre farm near Xenia, Ohio.

Harold H. Barrick, '17, was married

on June 20 to Miss Mila Butt, at Centerburg, Ohio. He will operate a farm near there, making a specialty of milking shorthorns.

Dwight C. Ginn, '16, was in the officers' training camp at Fort Benjamin Harrison.

Maurice D. Helser, '14, who was formerly teaching at the Arkansas State College, has been employed to teach in the animal husbandry department at the Iowa State College.

Harry F. Barnes, '17, is employed by the John Wildi Milk Condensing Company at Lewisburg, Pennsylvania.

Robert Wylie, '15, who has been teaching in the Iowa State College, spent the summer working for the dairy extension department of the Ohio State University.

R. H. Minns, '06, is associated with the Goodyear Tire & Rubber Company at Akron, Ohio.

Sidney Bliss, '17, enlisted in the Red Cross unit which Lakeside Hospital, Cleveland, Ohio, sent to France early in the summer. Previous to this he was in the service of the Ohio Agricultural Experiment Station at Wooster.

Elmer O. Fippin, '00, who is professor of soil technology at Cornell University, has been elected on the board of visitors of the Ohio State University Association.

Clarence W. Waid, '98, is the state potato specialist with the department of horticulture at the Michigan Agricultural College at East Lansing. He was recently elected president of the East Lansing Ohio State Alumni Association.

Edwin D. Coberly, '05, has been employed as chief clerk in the real estate and tax department of the Hocking Valley railroad. He moved from Georgesville, Ohio, to 2496 Findlay Avenue, Columbus, Ohio.

Herbert R. Watts, '10, is associated with Dean H. A. Morgan, of the College of Agriculture at the University of Tennessee. He is doing special work in entomology.

Alice B. Carroll, '11, was graduated from the Johns Hopkins University last June with the degree M. D. She will return to Baltimore in the early fall, where she will be associated with the Johns Hopkins Hospital.

Charles E. Wylie, '15, is instructor in dairying in the University of Tennessee.

Eugene R. McGlaughlin, '16, is assistant in the forest service of the United States department of agriculture, with headquarters at Anaconda, Montana.

Herbert L. Albing, '16, is doing landscape work in Grand Rapids, Michigan.

Robert L. Early, '16, is connected with the Mutual Commission Company at Cincinnati.

George M. Trautman, '14, was married on June 19 to Miss Mary Crumit, of Jackson. Mr. Trautman is an instructor in the athletic department of the university, and freshman football coach. They will be at home at 133 E. Norwich Avenue.

Joseph P. Hershberger, '12, is an assistant in the office of the state fire marshal. He was married on June 30 to Miss Hilda Kyle, of Columbus.

Frederick Herzer, '14, is teaching dairying at the Arkansas State Agricultural College.

Milo B. Jimison, '17, has been employed to work in the dairy extension department of the Ohio State University.

Erritt M. Selby, '13, was married on June 4, to Miss Eva Williams, of Columbus. They will be at home after September 10, in Marion, Ohio, where Mr. Selby will be an instructor in the high school.

COMPARISON OF NATIVE AND WESTERN FEEDER LAMBS

CLAYTON H. ELLIOTT, West Mansfield, Ohio

DOES it pay to feed native lambs? This is a question which many Ohio farmers will ask themselves this fall, especially since Chicago commission men tell us that western feeders will cost \$15.00 or \$16.00 per 100 pounds at the farm and that they will be hard to get at this figure. Notwithstanding this seemingly enormous price, I would say from experience that it does not pay to feed home-grown lambs, i. e., lambs born and reared on scant range such as is found on most farms in Ohio.

My reasons for saying that it does not pay can be given in 4 words, namely: worms and nodular disease. As I write this I have a vision of 10 or 12 lambs which I found lying here and there in my stalk fields and pastures last fall, killed by these internal parasites. I opened the fourth stomach of several of these unfortunate lambs and often found as many as a handful of worms attached to the lining of the stomach.

I have had two different experiences within the last 5 years, which convinces me without doubt that under our conditions I cannot afford to keep home-grown lambs and feed them over winter.

The first one of these experiences was 5 years ago when we bought a carload of western feeders, weighing around 40 pounds, and placed with them 12 lambs of our own raising. At the beginning of the feeding period the 12 lambs were fat and thrifty. The western lambs, on arrival, were apparently just wool, hide, and bone, but their frames were large, their hides were tick-free, and their stomachs were without internal parasites.

The 9 native lambs that were fortunate enough to live, actually weighed less at the end of the 90 days of feeding

than they did at the beginning. The western lambs gained steadily from the start until the day they were marketed. But that was not all, as we lost only one western lamb out of the carload, and 3 of the ones we raised died before the day of sale.

My last experience with natives was during the past winter when I fed a lot of crossbred lambs of my own raising, a cross from Merino ewes and Shropshire rams. Before putting the lambs in the feedlot I doped them for worms with copper sulphate, and they seemed to do better for a short time afterwards. At the time I put the lambs under shed, which was about November 15, I estimated their average weight at 60 pounds. They were fed 70 days, on a ration of corn and clover hay, and when sold they averaged 73 pounds. Besides, they were driven 1½ miles to market through a rain and snow storm which made their fleeces heavy. This shows a gain of a little over .18 pounds per day, or just about half what they should have gained. Moreover, out of a total of 210 lambs, which I had in the summer, at least 25 died from the effects of stomach worms before they were marketed.

As a result of these costly experiences I am going to offer one or two suggestions. First, have the lambs dropped as early as January 15 where practicable, and market them during the summer or early fall. Then buy western lambs for winter feeding. It is a good plan to let the home-grown lambs run to corn while on pasture. This extra feed enables them to keep in a more thrifty condition and thus to better withstand the attacks of parasites, especially during the hot summer months when pastures are short.

NEWS NOTES

PROFESSOR TAKES TRIP.

Charles S. Plumb, professor of animal husbandry at Ohio State University, spent the months of July and August traveling in the west and visiting with relatives in Oregon and California. He attended some of the western sales and visited many of the live stock farms in order to meet the western breeders and inspect their herds. Mrs. Plumb accompanied him on the trip. They returned by way of Yellowstone National Park and arrived home in time for the State Fair.

NEW INSTRUCTOR IN SOILS.

Prof. Guy Conrey, who is a graduate of the University of Michigan, has been selected to teach in the department of agricultural chemistry and soils. Mr. Conrey has spent several years in soil survey work, most of which was done in Wisconsin. During the past summer he has been working for the Ohio Agricultural Experiment Station on soil surveys. He will teach the origin and classification of soils with special reference to the state of Ohio.

FEDERAL FARM LOANS.

The Federal Farm Loan Board completed its first year of service early in August. The cooperative banking system for farmers has been put into complete operation in every state, and loans to farmers are now being approved at the rate of nearly one million dollars per day. The Federal Land Banks began lending late in the spring and in 2½ months more than 800 farm loan associations, representing \$40,000,000, had been chartered. Over \$5,000,000 of loans have already been closed and the money actually delivered.

It is expected that the 5 per cent capital thus provided will prove of material assistance in aiding the farmers of the United States to meet the increased demands for food occasioned by the war. Before another crop is planted this system will have become available to all the farmers of the country.

The loans are limited to 50 per cent of the appraised value of the land plus 20 per cent of the permanent insured improvements. Mortgages, under this act, run for 36 years. The farmers make annual payments equal to 6 per cent, 5 per cent paying interest and the remainder to be applied on the principal, thus ending the debt in 36 years. This cheap capital can not be used for land speculation and monopoly as loans are limited to \$10,000 each.

The borrower has the right to pay all or any part of the mortgage after it has run 5 years.

PROFESSOR SECURES DEGREE.

Prof. Firman E. Bear, of the soils department, attended the summer session of the University of Wisconsin and finished his work for a Doctor's degree. Mr. Bear graduated from the Ohio State University in 1908 and secured a Master's degree from the same school in 1910. The subject of his thesis for his last degree was: "The Correlation of Lime Requirement and Bacterial Activity in Soils."

RURAL ECONOMICS COURSE.

A new course will be given in the rural economics department this year by Prof. H. E. Erdman which will deal with the distribution of agricultural products, organized methods of marketing, and prices. The principles and methods of the various types of coop-

For a Greater and Better Ohio

The State Fair this year is another demonstration of the bigness and progressiveness of Ohio. It is another proof of her leadership in agriculture, stock raising, manufacturing, and scores of other branches which have made her people prosperous. Other states are accustomed to look to Ohio to lead them, not only in material things, but in intellectual and moral affairs as well.

Ohio is proud of her achievements, proud of her resources, proud that she can and does lead. She is proud of her farms, her herds, her manufactories. She is proud of her men and women. She is proud of her position in the sisterhood of states. She wants to grow better and greater and she is wise enough to know that her future depends on the boys and girls of today who will be the men and women of tomorrow.

These boys and girls are Ohio's greatest asset. The state is jealous of this asset. These boys and girls must be fostered and protected. Too much depends on them to permit anything to injure or destroy them.

For this reason the men and women of Ohio who are planning for a better and greater state are naturally interested in the campaign now on for state-wide Prohibition. They realize their opportunity and their responsibility. They know the 6,000 saloons now in Ohio are a menace to the boys and girls, as well as the men and women. They know the Ohio Supreme Court was right when it said, "The liquor traffic is the acknowledged source of much of the crime and pauperism of the state."

The people who are interested in making Ohio greater and better know the saloon is a liability, that it is a burden to the taxpayers, that license is a farce, that the traffic is lawless and refuses to be regulated, that it destroys efficiency, reduces man-power, and wastes thousands of tons of food stuffs which are needed to feed the starving and hungry.

Intelligent Ohio citizens know that the more than score of states now dry are so greatly benefitted that not one of them will permit saloons to return. They know that Congress has arranged to protect the soldier boys in their cantonments by refusing to permit saloons near them, and while they believe that Congress acted wisely, they cannot understand why the boys and girls in the homes should not be protected as well as the soldiers in the camps. If it is against the law to sell liquor to men in uniform, why not make it unlawful to sell to men in civilian clothes? In other words, why not state-wide Prohibition?

Ohio will vote on Prohibition November 6. This is the state's opportunity to again show her leadership. Not only can her voters declare for a greater and better Ohio by voting to close the breweries and saloons, but they can by so doing, lead the way to National Prohibition. The United States Senate has voted to submit nation-wide Prohibition to the states. The House will vote the same way. If Ohio votes dry in November, it will not only mean the ratification of the National amendment by the legislature of this state, but it will mean that other wet states will quickly follow Ohio's lead.

This is Ohio's responsibility and opportunity. To achieve this splendid result, every dry vote must be polled November 6. Let every man and every woman who wants a greater and better state, and who believes in the protection of Ohio's most valuable asset—the boys and girls—rally to the dry standard, weigh in every ounce of energy, vote out the saloons, and once more prove Ohio's leadership in moral as well as in material affairs.

J. A. WHITE, Mgr. Ohio Dry Federation.



Tractors Are Helping Win the War

eration adapted to rural conditions will also be studied. Mr. Erdman graduated from the South Dakota Agricultural College after which he spent 3 years doing graduate work at the University of Wisconsin.

MOST PROFITABLE HERD.

Mr. A. E. Day, of Newton, owns the high average association herd for Ohio for the year ending June 30. His herd is composed of 10 Holsteins that averaged 433.3 pounds of fat and 12,301 pounds of milk. The average production of the Eastern Hamilton County Association was 269.8 pounds of fat and 5,841.7 pounds of milk. The average profit above feed cost for the Day herd was \$133.22, while the average profit for the association was \$63.31. This shows that the Day Holsteins were twice as efficient as the average cow in the association. The best producer in the herd is Allie, an 8-year-old purebred that produced 522.4 pounds of fat from 15,718 pounds of milk, and made a profit of \$99.23.

NEW EXTENSION SPECIALIST.

Joseph F. Barker, who has been an agronomist at the Geneva Experiment Station at Geneva, New York, began work with the extension department of the Ohio State University on August 1. Mr. Barker will be connected with the soils department. He graduated from the Ohio State University in the class of 1908.

NATIONAL DAIRY SHOW.

Preparations for the National Dairy Show of 1917, to be held in Columbus, Ohio, October 18 to 29, are well under way and the responses to invitations to exhibit indicate that the previous brilliant records of the show will be excelled this year. The trade appears to be alive to the importance of the occasion. Never before has it realized the important place it holds among the industries that provide the nation's food and in the present circumstances, for our allies in the war. Recognition of this importance has inspired the trade



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Raise them so good—so strong and sturdy that they give a couple of weeks running start over the plants grown in the usual way.

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Start them early in February. Give them plenty of time to grow **without forcing**.

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Follow with a crop of Spring lettuce.

In the Fall one of cucumbers or tomatoes.

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with a desire to make a showing worthy of the greatness of the industry.

Milk, butter and cheese producers will be glad to learn that the United States department of agriculture has decided to take a prominent part in the display with a view of bringing home to the trade as well as to the public some features that are of special importance at the present time. The department will occupy a space 226x18 feet, covering one entire end of the coliseum. The production of milk, cheese and other dairy foods will be shown on the most approved plan.

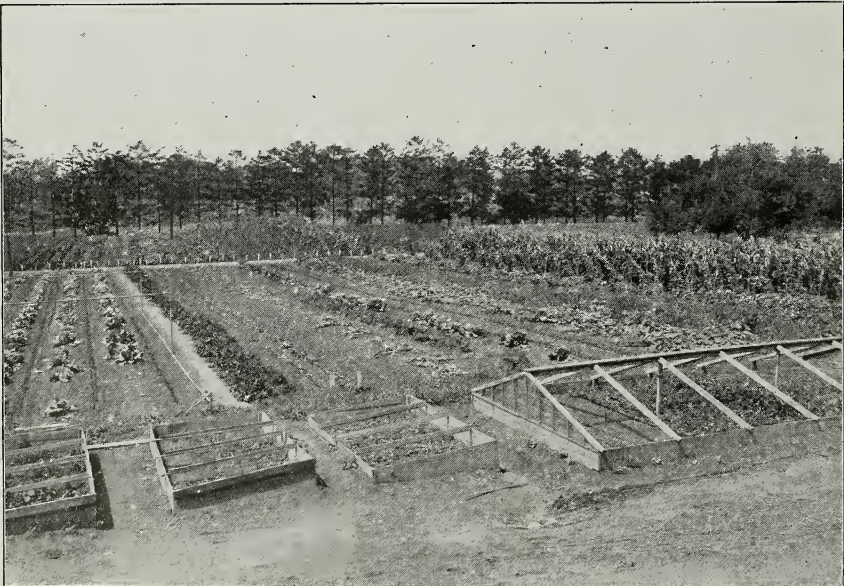
FARM MANAGEMENT.

County agents were relieved of the superintendency of the county experiment farms on July 1. The department of farm management at the Ohio Agricultural Experiment Station was reorganized by grouping the farms for the purpose of supervision. M. C. Bugby, of Canfield, will superintend the Mahoning and Trumbull county experiment farms; F. M. Lutts, of Norwalk,

will have charge of the Miami, Paulding and Madison county farms and the Northwestern Test Farm at Findlay; S. C. Hartman, of Marietta, will superintend the Washington county farm and the Southeastern Test Farm at Carpenter; J. P. Markley will superintend the Northeastern Test Farm at Strongsville; H. M. Wachter will have charge of the Southwestern Test Farm at Germantown; C. W. Montgomery will be acting superintendent of the Hamilton, Clermont and Belmont county farms.

UNIVERSITY PURCHASES BOAR.

The animal husbandry department of the university has purchased the Berkshire boar, Matchless Lee 10th 234400 from Sheffield farm. He is a son of Maramech's Matchless Lady 2nd by Matchless Baron 5th, a brother of the 1910 International barrow that attracted so much attention. Matchless Lee 10th is an attractive boar of desirable form and much quality, and an excellent example of the correct Berkshire type.



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Beginners' classes Tuesday evening, Sept. 11, and Friday evening, Sept. 21, 7:30 o'clock. First lesson.

Advance class Monday evening, Sept. 17.

Reception Night Thursday evening, Sept. 20.

Reception Night Saturday evening, Sept. 22 (front hall).



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Private lessons can be had afternoon or evenings.

The Waltz, Two-Step and the late modern dances taught in one term.



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AGRICULTURAL EDUCATION.

Dean Alfred Vivian is the head of the new department of agricultural education. Prof. W. F. Stewart, of Tracy, Minnesota, will teach this subject. Professor Stewart received his arts degree from Milton College, Wisconsin, and his master's degree from the University of Wisconsin, having specialized in education. He was instructor in agricultural education at the University of Wisconsin for one year and for 3 years had charge of agricultural work in a high school in Minnesota.

CHANGES IN TOWNSHEND.

The entire north end of Townshend Hall, which was formerly used as a laboratory for the department of farm crops has been changed into offices that are used by the various departments in the extension work. The farm crops department has been moved to the Horticultural building. The soil laboratory in the south end of Townshend has been rearranged and equipped with the latest apparatus so as to take care of the increasing number of students in this department.

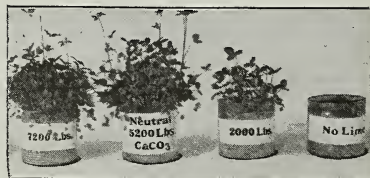


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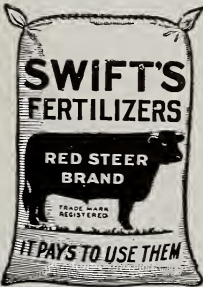
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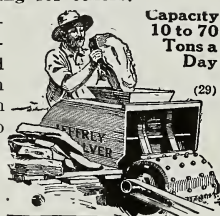
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ATTENTION, PRESBYTERIANS.

The Presbyterian Church has made plans that contemplate bringing to the Ohio State University some of the best known Bible teachers in the world for courses of lectures that shall be open to the students and people of Columbus without expense. This is being done in connection with the work of the Reverend William Houston. This plan for enlarging the scope of the church work includes building near the campus a "Westminster House" for students. Part of the money for this building has been secured, and when half has been paid to the treasurer, it will be begun. Such a plan is being promoted in all of the state universities.

OUR FIRST MARTYR.

Thomas Winch Barrett, of Mentor, Ohio, was the first Ohio State man to be killed in the war. He was a sophomore in the college of agriculture, but enlisted in May and went abroad in June. His death occurred on June 29 on the flying field at Tours when the gasoline tank of the machine exploded while he and his instructor were 1000 feet in the air. Military services were held for the dead aviator in France.

AVIATORS USE BUILDINGS.

The men who are in training at the Ohio State University for the aviation camp, occupy both the Armory and Hayes Hall. Consequently, these buildings will not be available for use during the school year unless different arrangements are made. This will affect the rural economics department and also the gymnasium department, both of which were located in these buildings.

Robert Billman, '17, is truck gardening near Dayton, Ohio.

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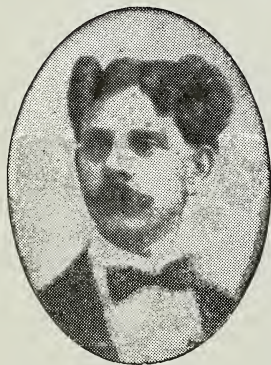
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Prof. H. J. Guerr

Homer C. Kelley, '14, was killed on May 7, near Wauseon, when the automobile which he was driving ran off of the road. Mr. Kelley was a landscape gardener and horticulturist.

Elmer P. Knoll, '16, died at his home in Norwalk on July 8, of spinal meningitis. Mr. Knoll taught science and coached athletics in the Niles high school during the past year.

Wilbur A. North, '17, will teach manual training in the high school at Woodstock, Ohio.

Henry W. Schuer, '16, will teach in the department of farm crops at Ohio State University during the coming year. He spent the summer on the home farm near Chillicothe, Ohio.

Raymond C. Gauch, '15, is connected with the Columbus branch of The Equitable Life Insurance Company of Iowa.

Harold G. Olin, '17, was married in May to Miss Coral Nathan, who was formerly an instructor in Spanish at the Ohio State University. They are at home on a farm near Belleville, Ohio. Mr. Olin was the business manager of The Agricultural Student last year.

Virgil O. Dreyer, '17, is bacteriologist with the Dayton Pure Milk Company.

Clell Solether, '13, is farming at Jerry City, Ohio. He is now secretary of the Wood County Farm Improvement Association.


Donald R. Acklin, '08, has been re-appointed a member of the Ohio Board of Agriculture. Mr. Acklin owns and operates Nilka farm near Perrysburg, besides being chairman of the agricultural committee of the Toledo Commerce Club. The raising of pure-bred hogs and horses is his special work.

WHAT IS MILK?

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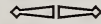
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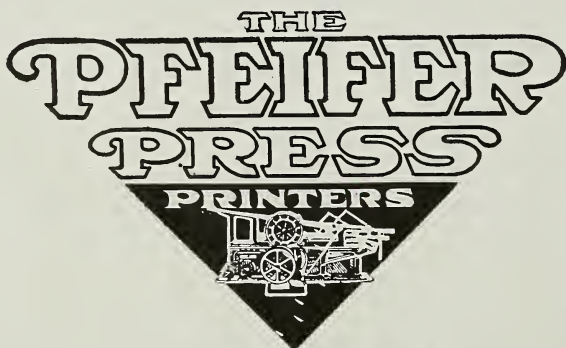
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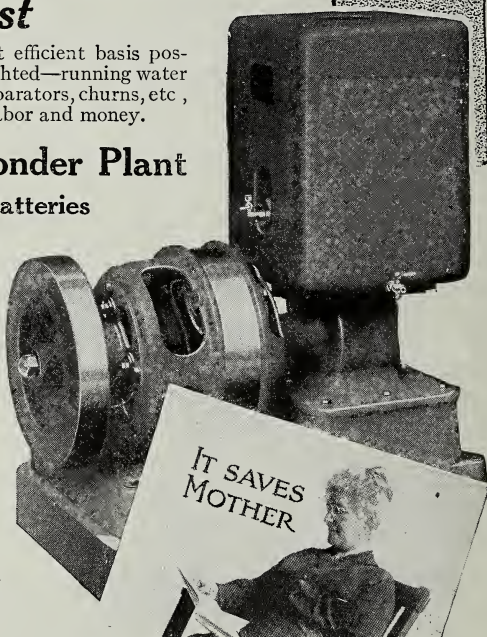
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